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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER MAURITS MARIA VAN GEERT
and PATRICK JEAN-FRANCOIS ETESSE

Appeal 2008-006058
Application 10/731,937
Technology Center 1700

Decided:¹ June 25, 2009

Before CHARLES F. WARREN, TERRY J. OWENS, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 1 and 4 in the Office Action mailed

¹ The two month time period for filing an appeal or commencing a civil action specified in 37 C.F.R. § 1.304, begins to run from the Decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

January 8, 2007. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2007).

We affirm the decision of the Primary Examiner.

Claim 1 illustrates Appellants' invention of a process for making a holographic structure, and is representative of the claims on appeal:

1. A process for making a holographic structure comprising:

producing a pattern on an organic solvent based embossable layer to form an embossed layer exhibiting a holographic effect;

applying an aluminum layer onto said embossed layer, said aluminum layer having pin-holes; and

applying a primer and a printing ink layer onto said aluminum layer such that said printing layer and said aluminum layer are solely separated by said primer,

wherein said embossable layer comprises a polyethylene terephthalate film and an acrylic lacquer applied on said film from an organic solvent selected from the group consisting of toluene, butyl acetate and ketones,

wherein said primer comprises acrylic compounds and is water solvent based and

wherein said printing ink layer is organic solvent based, and said ink layer comprises a colored ink and a white ink, said colored ink comprising ethanol as said organic solvent and said white ink comprising ethylacetate as said organic solvent, and

wherein said water solvent based primer prevents solvent from said organic solvent based ink from migrating through said aluminum layer to dissolve said acrylic lacquer on said polyethylene terephthalate film.

The Examiner relies upon the evidence in these references (Ans. 3):²

Culbertson	US 4,571,363	Feb. 18, 1986
Yamaguchi	US 5,200,253	Apr. 6, 1993
Catena	US 5,658,968	Aug. 19, 1997

² We consider these documents: Appeal Brief filed October 5, 2007; Examiner's Answer mailed November 13, 2007; and Reply Brief filed December 12, 2007.

Shearer WO 93/08084 Apr. 29, 1993

Derwent Abstract 1985-076981, JP Kokai No. 60-028459, Feb. 13, 1985
(hereinafter Derwent Abstract³)

Appellants request review of the ground of rejection under 35 U.S.C. § 103(a) advanced by the Examiner on appeal: claims 1 and 4 over admitted prior art at pages 1-2 of the Specification in view of Shearer, Derwent Abstract, Yamaguchi, Catena, and Culbertson. App. Br. 3; Ans. 3.

Appellants argue the claims as a group. App. Br., e.g., 3. Thus, we decide this appeal based on claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

Issue

The dispositive issue in this appeal is whether Appellants have shown that the evidence in the combined admitted prior art at pages 1-2 of the Specification and teachings of Shearer, Derwent Abstract, Yamaguchi, Catena, and Culbertson does not support the Examiner's conclusion of prima facie obviousness with respect to the claimed method of making a holographic structure encompassed by claim 1.

Claim Interpretation

The plain language of representative independent claim 1 encompasses a process of making any holographic structure comprising at least, in pertinent part, the steps, in order, of applying an aluminum layer with pin-holes on an acrylic lacquer layer that was applied from an organic solvent on a polyethylene terephthalate film substrate; applying a water solvent based acrylic compound containing primer on the aluminum layer;

³ The Derwent Abstract of the Japanese Patent Document is a different reference than the patent document. Thus, we have not considered the translation of the Japanese Patent Document prepared by the USPTO (PTO 2007-6922) made of record and attached to the Answer without comment therein.

and applying a layer of a colored ink comprising ethanol and a white ink comprising ethanol. *See, e.g., In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007); *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004), and cases cited therein; *In re Morris*, 127 F.3d 1048, 1054-55 (Fed. Cir. 1997).

Findings of Fact

We find Appellants disclose it is known that in a process of making a holographic structure including a thin metallic layer,

a typical film structure . . . [comprising an] organic solvent based lacquer [is] printed or applied, prior to embossement, onto a first side of a polyester (PET) film . . . Once this lacquer is applied . . . it is embossed so as to produce the holographic pattern. Once embossed, a metallic layer, typically aluminum, is vaporized or applied in another manner onto the embossed lacquer to form the “holographic core.” . . . Once this is done, printing can occur.

Spec. 2:4-14; *see also* 1:15-22.

We find Shearer would have disclosed to one of ordinary skill in this art a process of making a flexible sheet packaging material with holographic patterns comprising, among other things, the steps of forming an acrylic lacquer layer from a solvent-based emulsion on a substrate and embossing the lacquer layer; preferably applying aluminum by vapor deposition or sputtering to the embossed acrylic lacquer layer; and applying printing on the aluminum layer. Shearer 1:16 to 2:1; *see also*, e.g., 3:11-15. The acrylic lacquer layer can be applied from solvents such as toluene or methylethylketone if, after drying, the lacquer layer contains no more than 10 mg/m² thereof. Shearer 4:35 to 5:2.

We find Yamaguchi would have disclosed to one of ordinary skill in this art a method of making a hologram forming sheet in which a metal layer, such as aluminum, is provided on a hologram forming layer by, among other things, vacuum evaporation or sputtering. Yamaguchi, e.g., col. 5, ll. 52-59. In the embodiment of Yamaguchi's Example 8, as illustrated in Figure 24, a primer layer 115, which can be formed from lacquers, is provided on aluminum layer 114, and ink layers 119 can be provided on primer layer 115. Yamaguchi col. 17, l. 15 to col. 18, l. 17; *see also*, e.g., col. 18, ll. 34-52 and Fig. 25, and col. 21, ll. 8-19 and Fig. 29. Yamaguchi discloses primer layer 115 provides better adhesion between aluminum layer 114 and protective layer 116 which can be formed on primer layer 115. Yamaguchi col. 18, ll. 4-7. "The protective layer 116 is usually made of a cellulosic material but if printing or other processing is to be done on the surface of the protective layer 116, it may be formed of a poly(vinyl chloride-co-vinyl acetate) material." Yamaguchi col. 18, ll. 11-15.

We find Catena would have evinced to one of ordinary skill in this art that flexible packaging printing solvent-based printing inks for, among other things, polymer substrates including polyethylene terephthalate and polyester, and aluminum foils, are widely used in the graphic arts industry but are generally and ordinarily not receptive to water solvent-based primers which printers and packagers prefer. Catena col. 1, ll. 12-29 and 42-49. Catena would have further evinced to this person that blocking is a problem when printing on non-absorbent substrates such as flexible packaging, and prior art inks containing resins, including nitrocellulose, have less desirable adhesive strength and block resistance. Catena col. 1, ll. 30-41 and 49-55.

We find Catena would have disclosed to one of ordinary skill in this art an improved flexible package solvent-based printing ink which, among other things, is block resistant and has increased water-based primer compatibility. Catena col. 1, l. 65 to col. 2, l. 4; *see also* col. 2, ll. 57-61. Catena discloses that pigments for the inks impart colors, including white (titanium dioxide), and the solvents for the inks include, among other things, ethanol and ethyl acetate. Catena col. 3, ll. 14-51. Catena further discloses that the solvent-based printing inks can contain nitrocellulose. Catena col. 1, l. 65 to col. 2, l. 1.

We find Culbertson would have disclosed to one of ordinary skill in this art a water-solvent based primer coat comprising acrylic compounds for polyester films, wherein the films are useful for, among other things, packaging but are not readily receptive to coatings. Culbertson, e.g., col. 1, ll. 5-23; *see also* col. 2, ll. 28-37, col. 3, ll. 12-22, and col. 5, ll. 26-29. The primer coating provides adhesion to organic solvent based coatings, including organic solvent based printing inks on packaging materials. Culbertson col. 6, ll. 45-52.

A discussion of the Derwent Abstract is unnecessary to our decision.

Opinion

We considered the totality of the record in light of Appellants' arguments with respect to claim 1 and the ground of rejection advanced on Appeal. *See, e.g., In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”)(quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998); *In re Oetiker*, 977 F.2d

1443, 1445 . . . (Fed. Cir. 1992) (“After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument.”) (citing, *inter alia*, *In re Spada*, 911 F.2d 705, 707 n.3 (Fed. Cir. 1990)).

We are of the opinion Appellants have not shown that the evidence in the combined admitted prior art at pages 1-2 of the Specification and teachings of Shearer, Yamaguchi, Catena, and Culbertson does not support the Examiner’s conclusion of *prima facie* obviousness with respect to the claimed method of making a holographic structure encompassed by claim 1.

Appellants dispute that the combined admitted prior art in the Specification and teachings of the references relied on would result in a process of making a holographic structure encompassed by claim 1 with the contention, among other things, that Catena teaches away from using a water solvent-based primer with solvent-based printing in teaching that solvent-based flexible packaging inks are generally not receptive to water-borne primers or adhesives which are preferred by printers. App. Br. 5-6, citing Catena col. 1, ll. 27-30; *see above* p. 5; *see also generally* App. Br.; Reply Br. 2. Thus, Appellants argue Catena does not fairly suggest combining a solvent-based ink with a water solvent-based primer. App. Br. 5-6.

We disagree with Appellants’ position. Catena evinces that generally and ordinarily flexible packaging printing solvent-based printing inks are not receptive to water solvent-based primers and discloses flexible packaging printing solvent-based printing inks that are receptive to water solvent-based primers. *See above* pp. 5-6. Thus, we agree with the Examiner that there is no evidence or disclosure in Catena which would have led one of ordinary

skill in this art away from using the flexible packaging printing inks disclosed by the reference. Ans. 10. *See, e.g., In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (a prior art disclosure does not teach away if the “disclosure does not criticize, discredit, or otherwise discourage the solution claimed.”).

Appellants principally submit the problem of pin holes in the aluminum layer they discovered was not recognized in the prior art, and in the absence of recognition of this problem, one of ordinary skill in the art would not have been led to the combined admitted prior art in the Specification and teachings of the applied references relied on by the Examiner to solve the problem. App. Br., e.g., 3-4; Reply Br. 1-2. Appellants point out the solution to the problem is the water solvent-based primer that separates the solvent-based ink layer from the pin-hole containing aluminum layer which prevents migration of the solvents from the ink layer through the aluminum layer which would result in the dissolution of the embossed acrylic lacquer. App. Br., e.g., 4. Appellants argue that in the absence of a recognition of the problem, the solution would not have been taught by the applied prior art. App. Br., e.g., 4.

In this respect, Appellants point out that Shearer does not recognize the pin-hole problem in the aluminum layer and teaches printing directly on that layer, thus giving “rise to the very problem discovered and solved by” Appellants. App. Br. 6-7; Reply Br. 2. Appellants’ further point out that Yamaguchi teaches the use of a primer of lacquer to improve adhesion for printing. App. Br. 6-7 and 8. Appellants argue the combination of Shearer and Catena is based on hindsight as Catena is directed to solving the “blocking” problem and not to printing problems with holographic material.

App. Br. 7. Appellants further argue the combination of Yamaguchi and Catena is improper because Yamaguchi's protective layer contains a cellulosic material and Catena teaches there are problems printing on cellulosic material. App. Br. 8, citing Yamaguchi col. 18, l. 8. Appellants also point out that Culbertson does not address problems with hologram formation.

We initially note that Appellants' contention with respect to the combination of Yamaguchi and Catena does not address the evidence in these references. Indeed, Yamaguchi discloses printing directly on primer lacquer layer 115 and Catena's flexible packaging solvent based printing ink, for use on water solvent-based primers, contains nitrocellulose resin. *See above* pp. 5-6.

We agree with the Examiner that the motivation to combine the admitted prior art in the Specification and the teachings of Shearer, Yamaguchi, Catena, and Culbertson leading to processes of making a holographic structure encompassed by claim 1 need not be the same as that of Appellants. Ans. 8-9. Thus, it is sufficient if the applied prior art provides motivation to combine the teachings of the admitted prior art and the applied references even though it is not the same problem which Appellants disclose to be the basis for having made the claimed process. *See KSR Int'l Co. Teleflex, Inc.*, 550 U.S. 398, 418 (2007) (*quoting In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)) (“[A]nalysis [of whether the subject matter of a claim is obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”); *In re Kemps*, 97 F.3d 1427, 1430

(Fed. Cir. 1996), *citing In re Dillon*, 919 F.2d 688, 693, (Fed. Cir. 1990)(*en banc*) (motivation in the prior art to combine the references does not have to be identical to that of applicant to establish obviousness); *In re Beattie*, 974 F.2d 1309, 1312 (Fed. Cir. 1992) (“As long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor.”); *In re Kronig*, 539 F.2d 1300, 1304 (CCPA 1976) (The reference provides “ample motivation to add water in order to increase product yields, and we do not view the rejection as deficient merely because appellants allege a different advantage resulting from the addition of water. Obviousness under 35 U.S.C. § 103 does not require absolute predictability, and it is sufficient here that [the reference] clearly suggests doing what appellants have done.” (citations omitted)).

Here, we agree with the Examiner that one of ordinary skill in this art would have been armed with the knowledge in the art with respect to process of forming holographic structures on flexible packaging material as evinced by the admitted prior art in the Specification, Shearer and Yamaguchi, including that printing on the aluminum layer deposited on the embossed lacquer layer can be accomplished without a primer as taught by Shearer and with a lacquer primer as taught by Yamaguchi. Thus, this person would have been motivated to use Culbertson’s water solvent-based acrylic compound primer for flexible packaging material on the aluminum layer to provide adhesion for Catena’s flexible packaging solvent-based inks. Ans., e.g., 6-7. *See above* pp. 4-6. Indeed, this person would have had a reasonable expectation of success in view of Culbertson’s teachings that the primer provides adhesion for solvent-based inks on packaging material and

Catena's teachings of flexible packaging solvent based printing inks that are compatible with water solvent-based primers. *Ans.*, e.g., 6-7. *See above* pp. 5-6.

Accordingly, we are of the opinion that one of ordinary skill in this art routinely following the combination of admitted prior art at pages 1-2 of the Specification and teachings of Shearer, Yamaguchi, Culbertson, and Catena would have reasonably arrived at the claimed process of making a holographic structure encompassed by claim 1, including all of the limitations thereof, without recourse to Appellants' Specification. *See, e.g., KSR*, 550 U.S. at 417 (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)((“[T]he test [for obviousness] is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”); *In re Sovish*, 769 F.2d 738, 743 (Fed. Cir. 1985) (skill is presumed on the part of one of ordinary skill in the art); *Kronig*, 539 F.2d at 1304; *see also, e.g., Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1364 (Fed. Cir. 2007) (“the expectation of success need only be reasonable, not absolute”); *In re O’Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988) (“For obviousness under § 103, all that is required is a reasonable expectation of success.” (citations omitted)).

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined admitted prior art in the Specification, Shearer, Derwent Abstract, Yamaguchi, Catena, and Culbertson with Appellants' countervailing

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evidence of and argument for nonobviousness and conclude, by a preponderance of the evidence and weight of argument, that the claimed invention encompassed by appealed claims 1 and 4 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Primary Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

tc

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